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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,110	06/26/2003	Alaadin M. Suliman	6097P042	9250

8791 7590 02/09/2006

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EXAMINER
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BARAN, MARY C

ART UNIT	PAPER NUMBER
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2857

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/609,110	SULIMAN ET AL.	
	Examiner	Art Unit	
	Mary Kate B. Baran	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 May 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:
  - (a) On page 2 [0002] line 3, "caused" should be – causes –.
  - (b) On page 2 [0002] line 3, "affect negligible" should be – to have a negligible effect –.
  - (c) On page 2 [0002] line 4, "considered" should be – consider –.
  - (d) On page 3 [0005] line 3, "generators" should be – generators' –.
  - (e) On page 6 [0008] line 2, "below rated" should be – below the rated –.
  - (f) On page 13 [0032] line 4, "represents" should be – represent –.
  - (g) On page 13 [0033] lines 5-6, "to one-quarter" should be – to a one-quarter –.Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 16, 18, 20-29 and 34-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Wills (U.S. Patent No. 6,810,339).

Referring to claims 1, 20 and 34, Wills teaches monitoring a voltage output from a plurality of wind turbine generators (see Wills, column 5 lines 57-67 and column 6 lines 10-20) coupled to a power network by sampling voltage levels of the power network (see Wills, column 6 lines 39-47), wherein a sampling rate of the voltage sampling circuit is greater than a frequency of the power supplied to the power network (see Wills, column 10 lines 15-24); and determining whether the sampled voltage levels are within a predetermined operating range (see Wills, column 9 line 40 – column 10 line 14); designating a selected voltage sample as a triggering event if the selected voltage sample is not within the predetermined operating range (see Wills, column 9 line 40 – column 10 line 14); and capturing voltage samples in response to the triggering event, wherein the captured voltage samples correspond to a predetermined time period preceding the triggering even and a predetermined time period after the triggering event (see Wills, column 10 lines 15-24 and lines 49-53).

Referring to claims 21 and 35, Wills teaches automatically classifying a voltage disturbance corresponding to the captured voltage samples (see Wills column 9 line 59 – column 10 line 14).

Referring to claims 22 and 36, Wills teaches automatically ranking a voltage disturbance corresponding to the captured voltage samples (see Wills, column 9 line 49 – column 10 line 24).

Referring to claims 2, 23 and 37, Wills teaches that the power network comprises a utility grid (see Wills, column 6 lines 55-65).

Referring to claims 3, 24 and 38, Wills teaches detection of a sampled voltage that exceeds a predetermined ceiling threshold (see Wills, column 7 line 49 – column 8 line 5).

Referring to claims 4, 25 and 39, Wills teaches that the predetermined ceiling threshold comprises a voltage greater than 110% of rated voltage for the generators (see Wills, column 7 lines 30-41).

Referring to claims 5, 26 and 40, Wills teaches that the predetermined ceiling threshold comprises a voltage greater than 105% of rate voltage for the generators (see Wills, column 7 lines 30-41).

Referring to claims 6, 27 and 41, Wills teaches that a triggering event comprises detection of a sampled voltage that exceeds a predetermined floor threshold (see Wills, column 7 line 51 – column 8 line 5).

Referring to claims 7, 28 and 42, Wills teaches that the predetermined floor threshold comprises a voltage less than 70% of rated voltage for the generators (see Wills, column 7 lines 30-41).

Referring to claims 8, 29 and 43, Wills teaches that the predetermined floor threshold comprises a voltage less than 30% of rated voltage for the generators (see Wills, column 7 lines 30-41).

Referring to claim 16, Wills teaches that the frequency is 60 Hertz (see Wills, column 10 lines 32-35).

Referring to claim 18, Wills teaches that the frequency is 50 Hertz (see Wills, column 10 lines 32-35).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-15, 17, 19, 30-33 and 44-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wills (U.S. Patent No. 6,810,339) in view of Gibson (U.S. Patent No. 5,508,607).

Referring to claims 9, 30 and 44, Wills teaches all the features of the claimed invention except that the predetermined period of time preceding the triggering event comprises approximately one cycle preceding the triggering event.

Gibson teaches that the predetermined period of time preceding the triggering event comprises approximately one cycle preceding the triggering event (see Gibson, column 8 line 57 – column 9 line 7).

It would have been obvious at the time the invention was made to modify Wills to include the teachings of Gibson because capturing data for a predetermined time period either before or after a triggering event would have allowed the skilled artisan to ensure that the event was captured, as well as determining how the system was running prior to the event and whether or not the event was resolved.

Referring to claims 10, 31 and 45, Wills teaches all the features of the claimed invention except that the predetermined period of time preceding the triggering event comprises less than one cycle preceding the triggering event.

Gibson teaches that the predetermined period of time preceding the triggering event comprises less than one cycle preceding the triggering event (see Gibson, column 8 line 57 – column 9 line 7).

It would have been obvious at the time the invention was made to modify Wills to include the teachings of Gibson because capturing data for a predetermined time period either before or after a triggering event would have allowed the skilled artisan to ensure that the event was captured, as well as determining how the system was running prior to the event and whether or not the event was resolved.

Referring to claims 11, 32 and 46, Wills teaches all the features of the claimed invention except that the predetermined period of time after the triggering event comprises approximately one cycle preceding the triggering event.

Gibson teaches that the predetermined period of time after the triggering event comprises approximately one cycle preceding the triggering event (see Gibson, column 8 line 57 – column 9 line 7).

It would have been obvious at the time the invention was made to modify Wills to include the teachings of Gibson because capturing data for a predetermined time period either before or after a triggering event would have allowed the skilled artisan to ensure that the event was captured, as well as determining how the system was running prior to the event and whether or not the event was resolved.

Referring to claims 12, 33 and 47, Wills teaches all the features of the claimed invention except that the predetermined period of time after the triggering event comprises less than one cycle preceding the triggering event.

Gibson teaches that the predetermined period of time after the triggering event comprises less than one cycle preceding the triggering event (see Gibson, column 8 line 57 – column 9 line 7).

It would have been obvious at the time the invention was made to modify Wills to include the teachings of Gibson because capturing data for a predetermined time period either before or after a triggering event would have allowed the skilled artisan to ensure



that the event was captured, as well as determining how the system was running prior to the event and whether or not the event was resolved.

Referring to claim 13, Wills teaches all the features of the claimed invention except that the samples are stored in a volatile memory of a first device and the captured samples are stored in a non-volatile memory of a second device.

Gibson teaches that the samples are stored in a volatile memory of a first device and the captured samples are stored in a non-volatile memory of a second device (see Gibson, column 5 lines 7-19 and column 9 lines 3-7).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Wills to include the teachings of Gibson because storing the samples on volatile memory and then transferring them to non-volatile memory would have allowed the skilled artisan to overwrite the data when it is gathered on-site and still maintain a copy of the data to be analyzed later.

Referring to claim 14, Wills teaches all the features of the claimed invention except a network interface coupled with the sampling circuit and to the triggering circuit to transmit the captured samples to a remote location.

Gibson teaches a network interface coupled with the sampling circuit and to the triggering circuit to transmit the captured samples to a remote location (see Gibson, column 4 lines 44-51 and column 9 lines 3-7).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Wills to include the teachings of Gibson because storing the samples on volatile memory and then transmitting them to non-volatile memory would have allowed the skilled artisan to overwrite the data when it is gathered on-site and still maintain a copy of the data to be analyzed later.

Referring to claim 15, Wills teaches all the features of the claimed invention except that the samples are stored in a circular buffer and captured samples are retrieved from the circular buffer and stored in a non-volatile memory.

Gibson teaches that the samples are stored in a circular buffer and captured samples are retrieved from the circular buffer and stored in a non-volatile memory (see Gibson, column 8 lines 31-34).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Wills to include the teachings of Gibson because a circular buffer would have allowed the skilled artisan to overwrite previously stored data once the buffer is full (see Gibson, column 8 lines 33-34).

Referring to claim 17, Wills teaches all the features of the claimed invention except that the sampling rate is 240 Hertz.

Gibson teaches that the sampling rate is 240 Hertz (see Gibson, column 8 lines 35-39).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Wills to include the teachings of Gibson because acquiring data at a sampling rate greater than that of the frequency would have allowed the skilled artisan to ensure that a trigger event was collected.

Referring to claim 19, Wills teaches all the features of the claimed invention except that the sampling rate is 200 Hertz.

Gibson teaches that the sampling rate is 200 Hertz (see Gibson, column 8 lines 49-54).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Wills to include the teachings of Gibson because acquiring data at a sampling rate greater than that of the frequency would have allowed the skilled artisan to ensure that a trigger event was collected.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(a) Feddersen et al. teach a variable speed wind turbine having a passive grid side rectifier with scalar power control and dependent pitch control.

(b) Thompson et al. teach a control system and circuits for distributed electrical power generating stations.

- (c) Luongo et al. teach a shunt connected superconducting energy management system having a single switchable connection to the grid.
- (d) Spiegel et al. teach a fuzzy logic integrated electrical control to improve variable speed wind turbine efficiency and performance.
- (e) Seale teaches a fluid energy conversion system.
- (f) Brulle teaches a control system for a vertical axis windmill.
- (g) Hill teaches a substation load distribution monitor system.
- (h) Van Doorn et al. teach a power meter for determining parameters of multi-phase power lines.

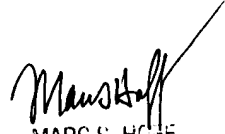
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Kate B. Baran whose telephone number is (571) 272-2211. The examiner can normally be reached on Monday - Friday from 9:00 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571) 272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2857

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

5 February 2006

  
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